Current Affairs

Washington—Center of Interest—Will Attract Many

Interest in the forthcoming spring meeting of the Society in Washington, D. C., is steadily increasing, for in addition to the heightened activity in Society affairs the capital city is a focus of special attention at this time. The opportunity to meet here is one which appeals to many and a large registration is already indicated. Convention headquarters will be the Wardman Park Hotel. Dates are April 8th through 12th

PAUL L. HOWARD
General Chairman

Technical Program

An extensive and varied four-day technical program will offer papers of interest to all members and guests of the Society.

The Electronics Division, which has been expanding at a phenomenal rate, is arranging sessions under three major topics: Rare Metals, Luminescence, and Gaseous Electronics. The Theoretical Division program, always a drawing card for those interested in the fundamentals of electrochemistry, is featuring a series of papers on Electrode Kinetics. The very active Electrothermic Division anticipates six technical sessions devoted to papers on High Temperature Materials and Operations, and, as in the past, an attractive program is expected from the Electric Insulation Division. Completing the full technical schedule will be a round-table discussion sponsored by the Industrial Electrolytic Division.

Committees

Heading the Convention Committee, as General Chairman, is Paul L. Howard with Dr. William Blum as Honorary Chairman. The Chairmen for the various individual committees are:

Registration Committee
Fielding Ogburn
Hotel Committee
Leo Waldron
Finance Committee
R. S. Dean
Trips and Transportation Committee
R. B. Goodrich
Entertainment Committee
W. J. Hamer
Publicity Committee
S. Eidensohn
Property Committee
A. G. Hellfritzsch

Particular attention is called to the fact that the spring meeting opens this year on Sunday, April 8th, with Board and committee meetings. Technical sessions will start on Monday morning, April 9th.

Registration

The Registration Committee also wishes to notify members and guests that they may register in advance, by mail. Advance registrants will simply call at the proper desk for their badges and tickets. Considerable time will be saved by this plan and undue confusion avoided.

Meetings and Entertainment

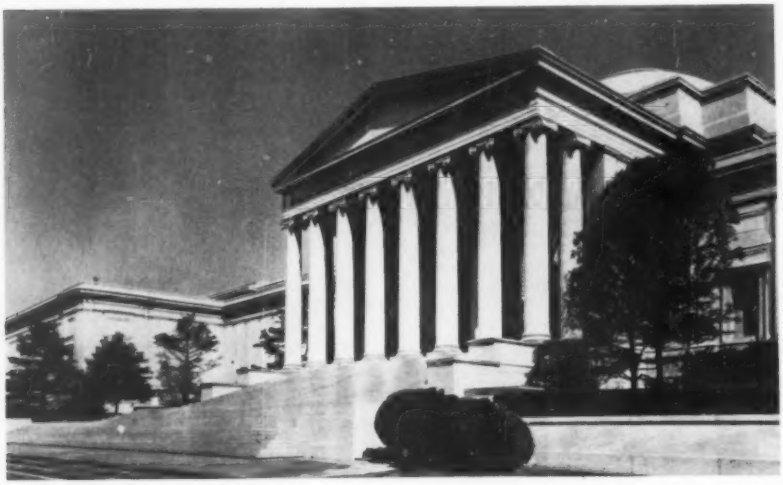
The preliminary schedule of meetings and entertainment which has been arranged includes the following features. On Sunday, April 8th, meetings will be held by the Board of Directors and various committees. A luncheon and general business meeting is scheduled for Monday, April 9th, and, in the evening, an informal buffet supper at the Wardman Park Hotel. On Tuesday, April 10th, a reception for Dr. and Mrs. Faust will take place followed by the Annual Banquet and entertainment. Also, the Young Author's Prize will be awarded and the Turner Book Prize. Division luncheons will be held on Tuesday, Wednesday, and Thursday. The

WILLIAM BLUM
Honorary Chairman

exact schedule and place of meeting for these will be published later.

Ladies' Program

Arrangements are now being completed for a full program for the ladies. This will include visits to the most interesting places in Washington and vicinity, sight-seeing trips in the capital, luncheons, etc. Heading the ladies' committee are Mrs. R. S. Dean, Mrs. H. D. Holler, and Mrs. Paul L. Howard.



NATIONAL ART GALLERY—ONE OF WASHINGTON'S MANY CENTERS OF CULTURAL INTEREST

Summer Corrosion Course at M.I.T.

Massachusetts Institute of Technology announces a summer course in corrosion to be held June 18–23, 1951. The course is designed primarily for men who want a refresher in fundamentals, as well as an opportunity to learn the latest developments in combating corrosion of industrial equipment. A series of lectures and demonstrations are being planned to cover a period of five and one-half days.

Professor Uhlig, in charge of the Corrosion Laboratory, stated that subjects to be covered by the course would include the following:

1. Fundamentals of corrosion reactions and control
2. Metals and alloys
   Metallurgical properties; guide to proper selection
3. Cathodic protection, theory and practice
4. Coatings
   Metallic—selection; behavior in corrosive environments
   Organic—selection; application; behavior
5. Treatment of environment
6. Design of equipment from a corrosion standpoint
7. How to set up corrosion tests

Living quarters will be available at nearby dormitories, and the student dining rooms will be open to all registrants in the course. For those who are interested in marine fouling, a trip will be arranged to the William F. Clapp Laboratories located on the shore at Duxbury, just north of Plymouth, Massachusetts.

Further details will be announced later, including names of authorities who will serve as lecturers. Inquiries should be addressed to Walter H. Gale, Director of Summer Session, Room 3-107, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

Semicentennial of NBS in 1951

The National Bureau of Standards marks its fiftieth anniversary in the year 1951. To honor the Bureau's semicentennial many leading scientific and technical organizations in the country have planned meetings in Washington during 1951, in recognition of the Bureau's role in science.

In addition, many committee conferences and local section meetings of societies will be held at the Bureau of Standards. The Bureau is also planning a series of symposia on special topics to be announced later.

The National Bureau of Standards was created by Act of Congress on March 3, 1901, and is the principal agency of the Federal Government for fundamental research in physics, mathematics, chemistry, and engineering. Its origin, however, actually extends back to the Constitution which specified weights and measures as a responsibility of the Federal Government. An Office of Weights and Measures grew out of the various acts of Congress beginning in 1830, and this Office was the direct antecedent of the Bureau.

Office Receives Gift from Cleveland Section

The recent convention of The Electrochemical Society held in Cleveland was, as all members remember, a large success with respect to the technical sessions. The result of this extremely interesting program was a considerably higher registration than the Cleveland Local Committee had anticipated. Therefore, the net income from that convention was more than the Section felt should be retained by the Convention Committee. They voluntarily turned over to the national office a total of $2.00 per registrant in place of the then existing regular fee of $1.00 per registrant, with the stipulation that part of this money be spent on some permanent piece of office equipment. The national office wishes to report to the members of the Cleveland Section in particular and the membership of the Society at large that there is now installed an automatic water cooler in the national office, improving the morale of the office force immensely. Thanks to the Cleveland Section.

British Industries Announce 1951 Fair

The British Industries Fair for 1951, Britain's annual industrial show, will be held from April 30th through May 11th. Heavy industry will be represented in Birmingham at Castle Bromwich, and other trades will be on show in London at Olympia and Earls Court.

This will be the biggest display in the Fair's 35-year history. Over 90 industries will be represented by the 3,000 exhibitors. For details, write British Information Services, 30 Rockefeller Plaza, New York, N. Y.

ERRATUM

Footnote 49, page 472, of the December 1950 issue of the JOURNAL is incorrect. Mr. Pellissier is employed by the Carnegie-Illinois Steel Corporation Research Laboratory, Pittsburgh, Pennsylvania.

SECTION NEWS

Cleveland Section

On December 12th, the Cleveland Section enjoyed a dinner meeting preceded by a social hour and followed by the technical session, held at the Cleveland Engineering Society.

The speaker of the evening, Dr. Robert L. Hanson, Bell Telephone Laboratories, Murray Hill, New Jersey, gave an interesting discourse accompanied by demonstrations on "Transistors."

Dr. Hanson described the fundamentals and applications of the transistor, a recent development of the Bell Telephone Laboratories and an outstanding new achievement of applied physics and physical chemistry. The transistor, he said, is a cross between a transformer and resistor and is capable of performing many of the functions of a vacuum tube, yet it is much smaller (approximately $\frac{3}{16}$ inches in diameter x $\frac{1}{2}$ inch long) and requires neither vacuum nor filament. Demonstrations showed the transistor operating as an oscillator and as an amplifier.

Dr. Hanson described the remarkable simplicity of construction of the transistor; this consists of a small piece of germanium, set at one end of a metal tube, and two phosphor bronze "whisker" probes which make contact with the germanium on the surface inside the tube. These probes constitute two electrodes, the third being the opposite surface of the germanium, making the required triode.

The heart of the transistor is a small piece of germanium, classified as a semiconductor. Semiconductors have the property of reducing resistivity with increasing temperature. However, the speaker said, the properties are extremely sensitive to impurities within the metal, as a trace of certain impurities can increase the resistance many times. In conclusion, Dr. Hanson foresaw many future applications for the transistor.

After the presentation, he answered questions from the audience.

L. E. Pucher, *Secretary*

Midland Section

The Midland Section met on December 4th for the second time this season. The program included a dinner at the Midland Country Club, attended by Section members and the guest speaker, Dr. A. B. Garrett, Professor of Chemistry at Ohio State University.

The technical meeting which followed the dinner was held at the Dow Auditorium in Midland, and opened with the naming of new committee members for this season.

Next, an informative motion picture in color on the production of carbon electrodes by the National Carbon Company was shown.

Dr. Garrett then addressed the gathering on the subject "Magnesium in Grignard Reactions." The talk was a progress report of the research program which is being carried out at Ohio State University concerning a fundamental study of the Grignard systems at equilibrium conditions. Data for the reactions of magnesium, zinc, and cadmium halides with their respective diethyl metal derivatives were shown. One of the major difficulties in the problem, Dr. Garrett said, was the development of suitable apparatus for carrying out the equilibrium studies. The apparatus shown was the result of several years of development work. The speaker next reviewed the differences between magnesium, zinc, and cadmium Grignard systems. Application of this research study to the Friedel-Crafts systems was also discussed.

H. H. Roth, *Secretary*

Pacific Northwest Section

At a recent meeting of the Pacific Northwest Section, new officers were elected as follows:

Chairman—Garth Putnam, University of Washington, Seattle, Washington

Vice-Chairman—Glen C. Ware, Bureau of Mines, Albany, Oregon

Secretary-Treasurer—Joseph Heitman, Pennsylvania Salt Manufacturing Company of Washington, Tacoma, Washington

Joseph Schulein, *Past Secretary*

India Section

The third technical meeting of the India Section of the Society was held on December 18, 1950, at the Indian Institute of Science, Bangalore, with Mr. J. Balachandra presiding.

Mr. V. Aravamuthan, Society member, and research assistant at the Department of Metallurgy, Indian Institute of Science, presented a paper on "Wealth from Methane." He dealt with the importance of utilization of methane as such or in combination with chlorine for (1) effecting economy in the use of electricity for the production of substances like acetylene, carbon tetrachloride, ferroalloys, etc.; (2) satisfying the demand for (*a*) carbon black used in the manufacture of dry cells and electrodes, (*b*) plastics and rubber-like materials used as insulators and for making lubricants for electrical machinery, and (*c*) ammonium chloride for use in dry cells; (3) encouraging the electrolytic method for the production of caustic soda and metals like magnesium from fused chloride; and (4) utilizing off-peak electricity, especially from hydroelectric sources, indirectly in the production of various commercially important substances in countries like India.

The meeting was adjourned after an interesting discussion.

T. L. Rama Char, *Secretary-Treasurer*

PERSONALS

Arnold R. Gahler of the Department of Chemistry, Purdue University, Lafayette, Indiana, has accepted a position in the Union Carbide and Carbon Research Laboratories, Niagara Falls, New York.

Louis A. Pavlish of Cleveland, Ohio, has joined the staff of the American Brake Shoe Company, National Bearing Division, Meadville, Pennsylvania.

Charles P. Roberts, Jr., of Westvaco Chemical Division, Food Machinery & Chemical Corporation, South Charleston, West Virginia, has been transferred to the company's plant at Pocatello, Idaho.

H. K. Ihrig has been elected vice-pretident in charge of research at the Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin. Dr. Ihrig had been connected with the Globe Steel Tubes Company of Milwaukee.

Robert C. Dunn recently of Baton Rouge, Louisiana, has accepted a position with the International Engineering Company, San Francisco, California.

Howard J. Strauss of New York City has taken a position as development engineer with the Electric Storage Battery Company of Philadelphia, Pennsylvania.

S. W. Shepard has been appointed materials engineer for the American

Cyanamid Company, 30 Rockefeller Plaza, New York City. Mr. Shepard was previously chief metallurgist at the Calco Chemical Division, Bound Brook, New Jersey.

CARROLL A. HOCHWALT has been appointed to the Executive Committee of Monsanto Chemical Company, St. Louis, by the board of directors. Dr. Hochwalt is a vice-president and member of the board of directors of the company. His sphere of activity will include the research, development, and patent activities of the company.

JAMES L. B. VAUGHAN is now on the staff of the Canadian Hanson & Van Winkle Company, Ltd., of Toronto, as research chemist.

CHARLES A. ESCOFFERY has accepted a position with the International Rectifier Corporation, Los Angeles, California, as manager of the Radio Stacks Division. Dr. Escoffery was formerly associated with the Selenium Rectifier Division of the Federal Telephone and Radio Corporation, Clifton, New Jersey.

WILLIAM H. KOLINS of Frontier Chemical Company, Denver City, Texas, is now on the staff of the Frontier Salt Company at Brownfield, Texas.

GEORGE W. VINAL, who recently retired as head of the electrochemistry section of the National Bureau of Standards, has been named engineering consultant and advisor to the Electric Storage Battery Company, Philadelphia.

JAMES L. CRENSHAW

James L. Crenshaw, head of the chemistry department, Bryn Mawr College, Bryn Mawr, Pennsylvania, died on November 22nd at Salisbury, North Carolina, following a heart attack. He was 63 years old.

Dr. Crenshaw was educated at Centre College and Princeton University and had been head of the chemistry department at Bryn Mawr since 1925. He joined The Electrochemical Society in 1934.

Chemical Translations
by mail
Werner Jacobson, B.S., M.S.
Translato rand Chemist
Microfilms Accepted
German, Swedish, Danish-Norwegian, French, Spanish, Portuguese, Italian, Russian, Polish, Chinese.
334 South Mozart Street Chicago 12

NEW MEMBERS

In December 1950 the following were elected to membership in The Electrochemical Society:

Active Members

JEAN-MARIE BOUCHARD, Consulting Engineer, mailing add: 54 Avenue du Bas Meudon, Issy-les-Moulineaux Seine, France (Electrothermic and Industrial Electrolytic)

LEONARD W. BUGHMAN, Great Lakes Carbon Corporation, mailing add: 416 Park Bldg., Pittsburgh, Pennsylvania (Industrial Electrolytic)

NEWTON K. DEMMON, National Carbon Division, Union Carbide and Carbon Corporation, Niagara Falls, New York (Industrial Electrolytic)

ANDREW DRAVNIEKS, Standard Oil Company, mailing add: 147 Dogwood Street, Park Forest, Chicago Heights, Illinois (Corrosion and Theoretical Electrochemistry)

JULIUS J. HARWOOD, Office of Naval Research, mailing add: 2511 Jennings Court, Kensington, Maryland (Corrosion)

MERRITT L. KASTENS, American Chemical Society, 60 East 42nd Street, New York, N. Y. (Corrosion, Electronics, and Industrial Electrolytic)

ISABELLE M. POGODZINSKI, Naval Research Laboratory, mailing add: 130 Irvington Street, S.W., Washington 20, D. C. (Battery)

CYRIL PRESGRAVE, G. & W. H. Corson, Inc., mailing add: Gwynedd Valley, Pennsylvania (Battery)

RALPH ROBERTS, Office of Naval Research, mailing add: 5510 First Street, N.W., Washington 11, D. C (Battery and Theoretical Electrochemistry)

DONALD H. SCHANTZ, Michigan Bumper Corporation, mailing add: 332 College Avenue, S.E., Grand Rapids 3, Michigan (Electrodeposition)

BRYCE P. SCHOFIELD, Armour Research Foundation, mailing add: 836 Windsor Avenue, Chicago 40, Illinois (Industrial Electrolytic)

TAKESHI TANAKA, Kyoto Research Institute of Nippon Carbon Company, Ltd., 61 Kamitoba, Karatomachi Shimokyoku, Kyoto, Japan (Electrothermic)

ROGER H. VAN HORNE, General Abrasive Company, mailing add: Roosevelt Avenue, R. 47, Niagara Falls, New York (Industrial Electrolytic)

JACK H. WESTBROOK, General Electric Company, Research Laboratory, The Knolls, Schenectady, New York (Corrosion, Electronics, Electrothermic)

Reinstatement

LOUIS A. PAVLISH, American Brake Shoe Company, mailing add: R. D. #2, Cambridge Springs, Pennsylvania (Corrosion and Electrodeposition)

Associate Members

T. R. ANANTHARAMAN, Indian Institute of Science, Bangalore 3, India (Corrosion, Electrodeposition, Electrothermic, and Theoretical Electrochemistry)

WILLIAM S. FISCHGRUND, Volupte, Inc., P.O. Box 240, Elizabeth, New Jersey (Electrodeposition)

THEODORE A. HIRT, The Thomas Steel Company, mailing add: 654 Elm Road, N.E., Warren, Ohio (Electrodeposition)

FRANK W. MARTIN, Sylvania Electric Products Inc., mailing add: 30 South Central Avenue, Wollaston, Massachusetts (Electrodeposition)

WILLIAM F. MEYERS, G. & W. H. Corson, Inc., mailing add: 709 Erlen Road, Plymouth Valley, R. D. #4 Norristown, Pennsylvania (Battery)

IRVING MOCH, JR., Columbia University, mailing add: 225 West 86th Street, New York 24, N. Y. (Industrial Electrolytic)

ANNOUNCEMENTS FROM PUBLISHERS

COLORIMETRIC DETERMINATIONS OF TRACES OF METALS, second edition, by E. B. Sandell. Published by Interscience Publishers, New York, London, 1950. 693 pages, $9.00.

Extensive additions and revisions have been made in this edition, adding about 190 pages, covering the recent advances made in this science. The book presents a reliable and up-to-date collection of modern methods of colorimetric determination; also new illustrations and tables are shown.

MID-CENTURY, The Social Implications of Scientific Progress, edited by John Ely Burchard. Published by The Technology Press of the Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York, 1950. 551 pages, $7.50.

This book is the record of an international convocation held by M.I.T. and attended by the world's outstanding men in the fields of science, philosophy,

politics, and business. In addition, a great deal of related material from other sources is included and the excellent editing of the work reflects the experience and knowledge of a distinguished career. The book is a valuable contribution to the history of our times, presenting points of view on contemporary problems which involve man and his relation to the world.

BOOK REVIEWS

MATERIALS OF CONSTRUCTION FOR CHEMICAL PROCESS INDUSTRIES by J. A. Lee. Published by McGraw-Hill Book Company, Inc., New York, 1950. VII plus 468 pages, $6.50.

The author of this book, a former president of The Electrochemical Society, is Southwestern Editor of the McGraw-Hill Publications and was formerly Managing Editor of *Chemical Engineering*, and its predecessor *Chemical and Metallurgical Engineering*. He had the opportunity over a period of several years to assemble a large volume of information on the materials of construction used successfully in the chemical process industries. The manufacturing processes for which information is given are of wide diversity and range alphabetically from acetaldehyde to zinc sulfate. More than 300 items, including organic and inorganic chemicals, foodstuffs, wood pulp, cane sugar, and even whisky, are included. An interesting and informative feature of the book is the flow sheet and description of process of manufacture given for many of the products. The chapters contain sections on production, handling and packaging. Information, some of which has not been published previously, is given on the corrosiveness of the final products, as well as on chemicals employed in their manufacture. The materials found most suitable for the construction of the equipment are described. The book contains a directory of the materials used in the process industries, listing by composition and manufacturer.

This monograph by Mr. Lee contains a wealth of information, the greater part of which is not available in other books on corrosion. It should be very useful to chemists, engineers and process men in the chemical industries. Published in McGraw-Hill Chemical Engineering Series, it is the usual good job of bookmaking one expects of this firm.

R. M. BURNS

PHYSICAL METHODS IN CHEMICAL ANALYSIS, Volume I, edited by Walter G. Berl. Published by Academic Press, Inc., New York, 1950. 664 pages, $12.00.

According to the editor and the publishers, the aim of this work is to describe those physical methods that have either proved themselves of considerable value in quantitative analytical work or are destined to play an important role in the future. Enough experimental and theoretical data have been assembled to minimize the need of consulting more specialized texts or the original literature to learn about the techniques and the instruments used in qualitative and quantitative conclusions with each analytical tool. The subject matter has been divided in such a way that all methods dealing with the interaction of radiation with matter (in addition to Mass Spectrometry) appear together in Volume I. Electrical, magnetic, and miscellaneous techniques and the methods of separation will appear in Volume II.

In attempting to fulfill the aim, the editor assembled in Volume I the following topics and authors:

Absorption Phenomena of X-Rays and γ-Rays by G. L. Clark (15 pp.)

X-Ray Diffraction Methods as Applied to Powders and Metals by W. L. Davidson (87 pp.)

X-Ray Diffraction as Applied to Fibers by J. A. Howsmon (54 pp.)

Electron Diffraction by L. O. Brockway (23 pp.)

Spectrophotometry and Colorimetry by W. R. Brode (58 pp.)

Emission Spectrography by J. Sherman (75 pp.)

Infrared Spectroscopy by H. H. Nielsen and R. A. Oetjen (69 pp.)

Raman Spectra by J. H. Hibben (17 pp.)

Polariscopic and Polarimetric Examination of Materials by Transmitted Light by C. D. West (53 pp.)

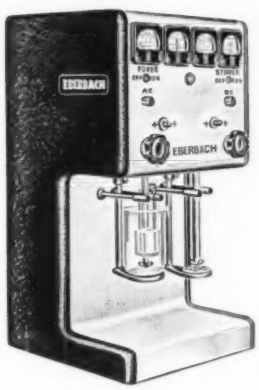
Refractive Index Measurement by L. W. Tilton and J. K. Taylor (46 pp.)

Electron Microscopy by R. D. Heidenreich (49 pp.)

Mass Spectrometry by H. W. Washburn (71 pp.)

Index (53 pp.)

In reading the individual chapters one has the feeling that the editor has been very successful in balancing the presentation of theoretical background, the description of instruments, and the presentation of typical results. A definite attempt has been made to



electro-analysis apparatus

Sturdy, versatile, attractive—this unit is rugged for continuous duty yet versatile for research. Built-in rectifier delivers 8 volts, 5 amperes DC to both spindles simultaneously or 10 amperes DC for a single determination. Ammeter, voltmeter, polarity reversing switch and power control knob are provided for each position. Case is stainless steel and cast aluminum. Operates from 115 or 230 volt, 60 cycle AC. Unit measures 14½" by 16½" by 29½" high. Ask for illustrated bulletin 130.

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evaluate each method critically and to point out its limitations as well as its advantages. The chapter on emission spectrography was particularly interesting because it presented pertinent details that are often presented only in a general way or are ignored: (*a*) a brief but convincing comparison of the economics involved in spectrographic and "wet" chemical methods, and (*b*) the use of an outline to show the exact steps required to prepare standard curves and interpret data.

The editor was careful to avoid more than a bare minimum in the overlap of theory from one chapter to another. The reviewer noted absence of overlapping of another sort in that the chapter on electron diffraction in this book was restricted to solids whereas a similar chapter by the same author in another collection was restricted to gases. One is torn between thanking the author for avoiding duplication and condemning him for making it desirable to purchase both series to get a complete picture of the field.

In the opinion of the reviewer, the book has accomplished its aim of providing a valuable survey of a number of specific analytical tools. The equivalent of chapters on x-ray diffraction of fibers and x-ray absorption are not readily accessible elsewhere.

Of necessity, only a brief background together with a few highlights in each field can be presented. As a result of differences in emphasis between authors in the same general field, the reader may, in comparing chapters in this book with similar ones in another, find surprisingly little overlap. Although, in one sense, such a situation justifies the purchase of a second treatise to supplement the first, the necessity for doing so indicates an inadequacy of both books in meeting their avowed aims.

The book is sturdily and attractively bound. The publishers have done an excellent job of reproducing photographs and complicated diagrams.

L. B. Rogers

NOTES FROM INDUSTRY

Products

Filtr-Ion is a new and refillable miniature ion exchange unit which slips over a faucet and delivers water equal in quality to triple-distilled. Designed for small quantity users, in soil testing, batteries, steam irons, photographic and other laboratories. Produced by La Motte Chemical Products Company, Towson, Baltimore, Maryland.

Fisher Scientific Company, Pittsburgh, Pennsylvania, offers rolls of cellulose tape, vividly printed with the words "Poison," "Corrosive," and "Flammable," respectively. A heavy

dispenser which holds all three is included. Recommended as a safety precaution for marking bottles, packages, etc.; 200 labels on each roll.

Emil Greiner Company, New York City, has recently introduced a new Electronic Resistance Thermometer, complete with bridge and bulb, and less expensive than similar nonelectronic equipment. It is simple to operate, precise and dependable; plugs in like a radio and measures temperatures to 1000° C.

Personalities

RCA Victor Division of Radio Corporation of America, Camden, New Jersey, recently announced the election of C. M. Odorizzi as operating vice-president, and the election of Edward M. Tuft as vice-president and director of the personnel department.

Raymond Szymanowitz was elected a Director of Acheson Colloids Limited, London, British affiliate of Acheson Colloids Corporation, Port Huron, Michigan.

R. A. Hoffman has been named director of research for Allied Research Products, Inc., Baltimore, Maryland.

American Cyanamid Company, Calco Chemical Division, Bound Brook, New Jersey, has announced the appointment of Dr. Glenn S. Watson of Williamstown, West Virginia, as resident technical director for the Marietta, Ohio, and Willow Island, West Virginia, plants of the firm.

James W. Fitzgerald has joined the staff of Atlantic Research Corporation, Alexandria, Virginia, as a specialist in the fields of instrumentation, ultrasonics, acoustics, electronics, and physics.

EMPLOYMENT SITUATIONS

Please address replies to box shown, c/o The Electrochemical Society, Inc., 235 West 102nd Street, New York 25, N. Y.

Positions Available

Research Chemist or Physicist, B.S. or M.S., young man, at least 2 years' experience, preferably in electrochemistry, inorganic chemistry, or physics of solids. Research and development work in battery field, North Jersey. State qualifications and expected salary. *Reply to Box A-219.*

Electrochemist, M.S. or Ph.D., with experience mainly in electroplating and electroforming techniques for advanced development in the electron tube industry in southeastern Pennsylvania. *Reply to Box A-220.*

Two Chemists or Chemical Engineers in modern laboratory, research division of light metals company. (1) Ph.D. in physical chemistry or electrochemistry for fundamental research and development of metal finishing processes. Some experience in industrial or academic research desirable but not mandatory. (2) B.S. or M.S. chemist, chemical engineer, or metallurgist with several years of practical experience in metal finishing, for process development and technical service work. Please give specific details of education, experience, salary expected, and availbility date. All inquiries treated in confidence and considered promptly. *Reply to Box A-221.*

Naval Research Laboratory has announced that it has available several positions of interest to Society members. At present, Civil Service status is not a prerequisite for consideration. A list of the vacancies to be filled may be obtained from the Personnel Division, Code 1817, Naval Research Laboratory, Washington 25, D. C.